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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/747,863

12/23/2003

Clive Smith

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7590
Colin P. Abrahams
Suite 400
5850 Canoga Avenue
Woodland Hills, CA 91367

04/09/2008

EXAMINER

MONIKANG, GEORGE C

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/747,863	Applicant(s) SMITH, CLIVE	
	Examiner GEORGE C. MONIKANG	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 10-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 4-5, 8, 11 & 13 (Application No. 10/747,863, hereinafter referred to as ‘863) are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 & 14 patent (No. 6,661,897 B2, hereinafter referred to as ‘897). Although the conflicting claims are not identical, they are not patentably distinct from each other.

The ‘863 claims 4-5, 8, 11 & 13 are broader recitations of the same invention claimed in ‘897 claims 1 & 14. Therefore, ‘897 claims 1 & 14 are encompassed by ‘863 claims 4-5, 8, 11 & 13. It is critical that patents issuing from these applications be

commonly owned to avoid potential licensees from owing license fees to two different parties.

Response to Arguments

1. In claim 12, the applicant claims a "storage or output". The combined teachings of Grasfield et al, AAPA and Andrea disclose an output means (Andrea, col. 3, lines 1-25).

2. Applicant's arguments, filed 12/26/2007, with respect to the rejection(s) of claim(s) 1-17 under 10/747,863 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new ground(s) of rejection are made in view of applicant's admitted prior art, Andrea, Kosaka et al, DesLauriers et al and Lancon.

3.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by DesLauriers et al, US Patent 5,774,563.

Re Claim 6, DesLauriers et al discloses an acoustic-to-electrical transducer for detecting body sounds (abstract), the transducer comprising: a diaphragm mounted in a

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housing such that the diaphragm can make contact with a body and vibrate in response to body sounds (abstrac); a diaphragm displacement-to-electrical conversion means to convert diaphragm displacement due to body sound vibrations to electrical signals (abstract); and the diaphragm attachment means including a provision for adjustment of diaphragm dynamic characteristics including tension and resonance frequency (col. 4, lines 1-13).

3. Claims 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by applicant's admitted prior art (hereinafter referred to as AAPA; PARA 0003-0013).

Re Claim 14, AAPA discloses a electrical audio frequency signal source with one or more output channels connected to one or more corresponding electrodes (AAPA, para 0008), to be used in conjunction with a capacitance-to-electrical conversion means (AAPA, para 0008), said electrodes mounted on or close to the surface of a device that can be removably attached to a live or inanimate body (AAPA, para 0008).

Re Claim 15, AAPA discloses the signal source and electrodes as in claim 14 wherein the capacitance-to-electrical conversion means is a capacitive acoustic-to-electrical transducer for detecting body sounds (AAPA, para 0008), the transducer being adapted to detect voltage changes on the electrodes (AAPA, para 0008), converting such voltage changes to an audio output signal (AAPA, para 0008).

4.

5. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Lancon, US Patent 5,687,246.

Re Claim 17, Lancon discloses a device for selectively listening to one of many audio signals (abstract), the device comprising: a multi-channel audio signal source connected to electromagnetic output stimulus transducers (abstract), said stimulus transducers placed at a multitude of sites on the surface of an object (abstract); an electromagnetic-to-audio signal input transducer connected to an audio output means (abstract), said input transducer being sensitive to electromagnetic signals emitted from the stimulus transducers when placed in close proximity to the output stimulus transducers (abstract), relative to the distance between said transducers (abstract); the process of selecting a given audio signal by moving the input transducer to a selected stimulus transducer site and placing the input transducer close to the stimulus transducer such that the audio signal is coupled to the input transducer for reproduction via the audio output means (abstract).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2, 4-5 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grasfield et al, US Patent 6,005,951, in view of applicant's admitted prior art (hereinafter referred to as AAPA; PARA 0003-0013), and further in view of Andrea, US Patent 5,909,495.

Re Claim 1, Grasfield et al discloses a stethoscope with acoustic-to-electrical transducer for detecting body sounds (col. 9, lines 57-60), the transducer comprising: a diaphragm mounted in a housing such that the diaphragm can make contact with a body and vibrate in response to body sounds (abstract: biological activity); but fails to disclose a diaphragm displacement-to-electrical conversion means to convert diaphragm displacement due to body sound vibrations to electrical signals. However, AAPA does (AAPA, para 0008). Grasfield and AAPA together fail to disclose the transducer housing having one or more apertures or openings to provide a low-impedance acoustic path for ambient sound to enter the space within the housing including the space behind diaphragm. However, Andrea does (Andrea, col. 3, lines 1-25).

Taking the combined teachings of Grasfield et al, AAPA and Andrea as a whole, one skilled in the art would have found it obvious to modify the stethoscope with acoustic-to-electrical transducer for detecting body sounds (col. 9, lines 57-60), the transducer comprising: a diaphragm mounted in a housing such that the diaphragm can make contact with a body and vibrate in response to body sounds (abstract: biological

activity) of Grasfield et al with a diaphragm displacement-to-electrical conversion means to convert diaphragm displacement due to body sound vibrations to electrical signals (AAPA, para 0008) of AAPA with the transducer housing having one or more apertures or openings to provide a low-impedance acoustic path for ambient sound to enter the space within the housing including the space behind diaphragm as taught in Andrea (Andrea, col. 3, lines 1-25) to improve the efficiency of the stethoscope and eliminate background noises.

Re Claim 2, which further recites, "Wherein the apertures can be opened or closed by a user." The combined teachings of Grasfield et al, AAPA and Andrea do not disclose the apertures being opened or closed by a user. Official notice is taken that both the concepts and advantages of opening and closing the apertures being conducted by the user are well known in the art. Thus it would have been obvious for a user to open and close the aperture to control the amount of noise affecting the stethoscope.

Claims 4 & 12 have been analyzed and rejected according to claim 1.

Re Claim 5, the combined teachings of Grasfield et al, AAPA and Andrea disclose the transducer according to claim 4, but fails to disclose wherein: the diaphragm includes a conductive surface or plane connected as one electrode of a capacitive transducer (AAPA, PARA 0008); the displacement-to-electrical conversion means being a capacitance-to-electrical conversion means with a capacitive electrode mounted in said housing and connected to a circuit such that the diaphragm conductive surface and capacitive electrode form a capacitance (AAPA, PARA 0008), said

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capacitance changing in response to diaphragm displacement due to body sound vibration (AAPA, PARA 0008).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grasfield et al, US Patent 6,005,951, applicant's admitted prior art (hereinafter referred to as AAPA; PARA 0003-0013), and Andrea, US Patent 5,909,495, as applied to claim 1, and further in view of Pluvinage et al, US Patent 5,987,146.

Re Claim 3, the combined teachings of Grasfield et al, AAPA and Andrea disclose the transducer according to claim 1, but fails to disclose a moisture barrier with low acoustic impedance placed between apertures and internal housing cavity (Pluvinage et al, col. 5, lines 47-51), such that a low impedance acoustic path for ambient sound to enter a housing cavity is maintained (Pluvinage et al, abstract), while moisture and humidity are prevented from entering the cavity (Pluvinage et al, col. 5, lines 47-51).

Taking the combined teachings of Grasfield, AAPA, Andre and Pluvinage et al as a whole, one skilled in the art would have found it obvious to modify the transducer of Grasfield, AAPA and Andrea with a moisture barrier with low acoustic impedance placed between apertures and internal housing cavity (Pluvinage et al, col. 5, lines 47-51), such that a low impedance acoustic path for ambient sound to enter a housing cavity is maintained (Pluvinage et al, abstract), while moisture and humidity are prevented from entering the cavity (Pluvinage et al, col. 5, lines 47-51) as taught in Pluvinage et al to improve the overall quality of the diaphragm.

Claims 8, 10-11 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grasfield et al, US Patent 6,005,951, applicant's admitted prior art (hereinafter referred to as AAPA; PARA 0003-0013), and further in view of Kosaka et al, US Patent 4,723,295.

Re Claim 8, Grasfield et al discloses an acoustic-to-electrical transducer for detecting body sounds (col. 9, lines 57-60), the transducer comprising: a diaphragm having an electrically conductive surface (abstract: biological activity), the diaphragm being mounted in a housing such that the diaphragm can make contact with the body and vibrate in response to body sounds (abstract: biological activity); but fails to disclose a fixed conductive plate substantially parallel to the diaphragm (AAPA, PARA 0008), mounted within the housing, the conductive plate being positioned at a distance from the diaphragm, the diaphragm conductive surface and fixed conductive plate forming two plates of a capacitor and connected in the form of an electrical capacitance to electrical circuitry (AAPA, PARA 0008); a capacitance-to-electrical conversion means to convert diaphragm-plate capacitance changes due to body sound vibration to electrical signals (AAPA, PARA 0008), a drive circuit connected to diaphragm electrically-conductive surface (AAPA, PARA 0008). Grasfield et al and AAPA fail to disclose an AC signal voltages applied to a surface, wherein the AC signals are noise-canceling signals that increase the signal-to-noise ratio of the electrical conversion, where the signal is due to body vibration and the noise is due to ambient sound (Kosaka et al, col. 12, line 62 through col. 13, line 14). However, Kosaka et al does.

Taking the combined teachings of Grasfield et al, AAPA and Kosaka et al as a whole, one skilled in the art would have found it obvious to modify the acoustic-to-electrical transducer for detecting body sounds (col. 9, lines 57-60), the transducer comprising: a diaphragm having an electrically conductive surface (abstract: biological activity), the diaphragm being mounted in a housing such that the diaphragm can make contact with the body and vibrate in response to body sounds (abstract: biological activity) of Grasfield et al with a fixed conductive plate substantially parallel to the diaphragm (AAPA, PARA 0008), mounted within the housing, the conductive plate being positioned at a distance from the diaphragm, the diaphragm conductive surface and fixed conductive plate forming two plates of a capacitor and connected in the form of an electrical capacitance to electrical circuitry (AAPA, PARA 0008); a capacitance-to-electrical conversion means to convert diaphragm-plate capacitance changes due to body sound vibration to electrical signals (AAPA, PARA 0008), a drive circuit connected to diaphragm electrically-conductive surface (AAPA, PARA 0008) of AAPA with an AC signal voltages applied to a surface, wherein the AC signals are noise-canceling signals that increase the signal-to-noise ratio of the electrical conversion, where the signal is due to body vibration and the noise is due to ambient sound (Kosaka et al, col. 12, line 62 through col. 13, line 14) as taught in Kosaka et al to improve the efficiency of the stethoscope and reduce the noise.

Claims 10-11 have been analyzed and rejected according to claim 8.

Claim 13 has been analyzed and rejected according to claims 1 & 8.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (hereinafter referred to as AAPA; PARA 0003-0013).

Re Claim 16, which further recites, "Wherein the signal source comprises, or can be driven by, a computer." AAPA does not disclose a computer as claimed. Official notice is taken that both the concepts and advantages of using a computer to drive audio signals are well known in the art. Thus it would have been obvious to use a computer to drive audio signals to make the system more dynamic.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GEORGE C. MONIKANG whose telephone number is (571)270-1190. The examiner can normally be reached on M-F. alt Fri. Off 7:30am-5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George C Monikang/
Examiner, Art Unit 2615

3/28/2008

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2615